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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,772	11/18/2002	Hwang Choe	24-NS-6042	2406
23465	7590	11/15/2007	EXAMINER	
JOHN S. BEULICK			GREENE, DANIEL LAWSON	
C/O ARMSTRONG TEASDALE, LLP			ART UNIT	PAPER NUMBER
ONE METROPOLITAN SQUARE			3694	
SUITE 2600			MAIL DATE	
ST LOUIS, MO 63102-2740			11/15/2007	
			DELIVERY MODE	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/065,772	CHOE ET AL.
	Examiner	Art Unit
	Daniel L. Greene Jr.	3694

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 04 September 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,3-7,9,10 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,3-7,9,10 and 20-22 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 5, filed 9/4/2007, with respect to the Objection to the drawings have been fully considered and are persuasive. Applicant is relying on figure 3 to show the metes and bounds of the limitations the Examiner questioned. It is noted the figure 3 is generic in that it does not appear to set forth any specific features of each respective item. Accordingly, figure 3 cannot be dispositive of other systems and methods of achieving the same result. Since it appears applicant is of the opinion that Figure 3 will aid in protecting the validity of any patent that may potentially issue, the Objections of sections 10 and 11 of the previous Office action mailed 4/3/2007 have been withdrawn.
2. Applicant's amendment to claim 1 has obviated the rejections of section 13.a.
3. Applicant's arguments with respect to the rejections set forth in sections 13.b.-13.h have been fully considered and are persuasive. The rejections of sections 13.b.-13.h have been withdrawn.
4. **Applicant's arguments with regard to section 15 of the previous Office action mailed 4/3/2007 have been fully considered but they are not persuasive.**

- a. Applicant's arguments are unpersuasive as applicant has not shown that the references do not teach what the examiner has stated they teach, nor has applicant shown that the examiner's reasoning for and manner of combining the teachings of the references is improper or invalid.

b. Applicant argues that Patterson fuel assemblies are arranged in two regions of the core, not three. Although applicant may interpret the reference in a different manner as the Examiner, the Examiner has clearly shown how Patterson clearly shows three core flow regions as explained. It is immaterial that Patterson may have more than three different regions, i.e. region A and B, with region A being further subdivided into three different flow regions. To put it another way, the Examiner considers each different fuel assembly as a different region within the region between A and B. See also figure 1 to show that figure 2 does indeed show three separate radial regions of flow.

c. The Examiner has already shown how Patterson discloses orifices and restriction devices. See the figure on page 10 of the previous Office action mailed 4/3/2007.

d. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

5. Applicant's arguments regarding section 16 of the previous Office action have been fully considered but they are not persuasive.

a. Applicant's arguments are unpersuasive as applicant has not shown that the references do not teach what the examiner has stated they teach, nor has

applicant shown that the examiner's reasoning for and manner of combining the teachings of the references is improper or invalid.

b. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

c. Applicant so aptly states that Matzner et al. teaches "appreciable change in...pressure drop, should be avoided". Accordingly there is **some** pressure drop experienced, ergo a "restriction device".

6. Applicant's arguments regarding section 17 of the previous Office action have been fully considered but they are not persuasive.

a. Applicant's arguments are unpersuasive as applicant has not shown that the references do not teach what the examiner has stated they teach, nor has applicant shown that the examiner's reasoning for and manner of combining the teachings of the references is improper or invalid.

b. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Objections

7. Claim1 is objected to because of the following informalities: Applicant deleted the word "an" and added "coolant". The claim should be amended to recite proper English, i.e. " a main coolant flow channel comprising a coolant inlet," Appropriate correction is required.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

8. **Claims 1 to 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patterson (U.S. Patent 3,892,625) in view of JP 06-289178 (Yasuyaki) for the reasons set forth in section 9 of the previous office action mailed 11/06/2006 for the reasons set forth in section 15 of the previous office action mailed 4/3/2007.**

See the explanation set forth in section 4 above.

9. **Claims 1, 3-7, 9, 10 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) in view any of Congdon et al. Patterson or Yasuyaki and further in view of either U.S. Patent 5,384,814 to**

Matzner et al. OR U.S. Patent 5,524,031 to Kilian for the reasons set forth in section 16 of the previous office action mailed 4/3/2007.

See the explanation set forth in section 5 above.

10. Claims 1, 3-7, 9, 10 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Congdon et al. in view of either U.S. Patent 5,384,814 to Matzner et al. OR U.S. Patent 5,524,031 to Kilian for the reasons set forth in section 17 of the previous office action mailed 4/3/2007.

See the explanation set forth in section 6 above.

Conclusion

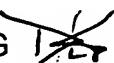
11. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

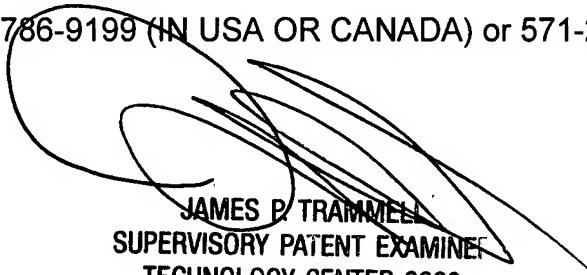
12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Greene Jr. whose telephone number is (571) 272-6876. The examiner can normally be reached on Mon-Thur.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James P. Trammell can be reached on (571) 272-6712. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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